



The PLATO Mission

Heike Rauer¹, Conny Aerts², Magali Deleuil³, Laurent Gizon⁴, MarieJo Goupil⁵, Ana Heras⁶, Miguel Mas-Hesse⁷, Isabella Pagano⁸, Giampaolo Piotto⁹, Don Pollacco¹⁰, Roberto Ragazzoni¹¹, Gavin Ramsay¹², and Stephane Udry¹³

¹DLR, Institute of Planetary Research, Berlin, Germany

²KU Leuven, Belgium

³Laboratoire d'Astrophysique de Marseille, France

⁴Max Planck Institute for Solar System Research, Germany

⁵LESIA/Observatoire de Paris, France

⁶European Space Agency

⁷Centro de Astrobiología (CSIC/INTA), Spain

⁸INAF-Osservatorio Astrofisico di Catania, Italy

⁹Università degli Studi di Padova, Italy

¹⁰University of Warwick, UK

¹¹INAF-Osservatorio Astronomico di Padova, Italy

¹²Armagh Observatory and Planetarium, UK

¹³University of Geneva, CH

PLATO (PLANetary Transits and Oscillations of stars) is ESA's M3 mission and designed to detect and characterize extrasolar planets by high-precision, long-term photometric and asteroseismic monitoring of a large number of stars. PLATO will detect small planets around bright stars, including terrestrial planets in the habitable zone of solar-like stars. With the complement of radial velocity observation from ground, planets will be characterized for their radius, mass, and age with high accuracy. PLATO will provide us the first large-scale catalogue of well-characterized small planets up to intermediate orbital periods, relevant for a meaningful comparison to planet formation theories and to better understand planet evolution. It will make possible comparative exoplanetology to place our solar system planets in a broader context. PLATO will study host stars using asteroseismology, allowing us to determine the stellar properties with high accuracy, substantially enhancing our knowledge of stellar structure and evolution.

PLATO is scheduled for a launch date end 2026. Following the successful Critical Milestone Review, ESA has given green light for the implementation of the spacecraft and the payload, which includes the serial production of its 26 cameras. This presentation will give an overview of the PLATO science goals, of its instrument and mission profile status.